

CLAIMS

What is claimed is:

1. A method comprising:

receiving a request to transition control to a virtual machine (VM) from

a virtual machine monitor (VMM);

determining whether the VMM has requested a delivery of a fault to

the VM; and

if the VMM has requested the delivery of a fault to the VM, delivering

the fault to the VM when transitioning control to the VM.

2. The method of claim 1 wherein the request to transition control to the

VM is received via an instruction executed by the VMM.

3. The method of claim 1 wherein determining whether the VMM has

requested the delivery of the fault to the VM comprises:

accessing a fault indicator maintained by the VMM; and

determining whether the fault indicator is set to a delivery value.

4. The method of claim 1 further comprising:

determining an identifier of the fault and a type of the fault; and

determining whether the fault is associated with an error code that is to

be provided to a handler associated with the fault.

5. The method of claim 4 further comprising:
 - if the fault requires the delivery of the error code to the handler associated with the fault, retrieving the error code and providing the error code to the handler.
6. The method of claim 4 wherein:
 - the fault indicator, the fault identifier and the type of the fault are stored in a first field; and
 - the error code is stored in a second field.
7. The method of claim 6 wherein the first field and the second field are included in a virtual machine control structure (VMCS).
8. The method of claim 1 further comprising:
 - determining that the delivery of the fault was not successful;
 - determining whether a new fault requires a transition of control to the VMM; and
 - transitioning control to the VMM if the new fault requires the transition.
9. The method of claim 8 further comprising:
 - determining that the new fault does not require a transition of control to the VMM; and

delivering the new fault to the VM.

10. An apparatus comprising:
 - a virtual machine monitor (VMM);
 - a data structure controlled by the VMM, the data structure storing a fault indicator; and
 - fault delivery logic to receive a request to transition control to a virtual machine (VM) from the VMM, to determine whether the VMM has requested a delivery of a fault to the VM using the fault indicator, and to deliver the fault to the VM when transitioning control to the VM if the VMM has requested the delivery of the fault to the VM.
11. The apparatus of claim 10 wherein the request to transition control to the VM is received via an instruction executed by the VMM.
12. The apparatus of claim 10 wherein the fault delivery logic is to determine whether the VMM has requested the delivery of the fault to the VM by accessing the fault indicator maintained by the VMM, and determining whether the fault indicator is set to a delivery value.
13. The apparatus of claim 10 wherein the fault delivery logic is further to determine an identifier of the fault and a type of the fault, and to determine whether the fault is associated with an error code that is to be provided to a

handler associated with the fault.

14. The apparatus of claim 13 wherein the fault delivery logic is further to retrieve the error code and provide the error code to the handler if the fault requires the delivery of the error code to the handler associated with the fault.

15. The apparatus of claim 13 wherein:

the fault indicator, the fault identifier and the type of the fault are stored in a first field; and

the error code is stored in a second field.

16. The apparatus of claim 15 wherein the first field and the second field are included in a virtual machine control structure (VMCS).

17. The apparatus of claim 10 wherein the fault delivery logic is further to determine that the delivery of the fault was not successful, to determine whether a new fault requires a transition of control to the VMM, and to transition control to the VMM if the new fault requires the transition.

18. The apparatus of claim 17 wherein the fault delivery logic is further to determine that the new fault does not require a transition of control to the VMM, and to deliver the new fault to the VM.

19. A system comprising:
 - a memory to store guest software; and
 - a processor, coupled to the memory, to receive a request to transition control to the guest software from a virtual machine monitor (VMM), to determine that the VMM has requested a delivery of a fault to the guest software, and to deliver the fault to the guest software when transitioning control to the guest software.
20. The system of claim 19 wherein the processor is further to determine whether the VMM has requested the delivery of the fault to the VM by accessing a fault indicator maintained by the VMM, and determining whether the fault indicator is set to a delivery value.
21. The system of claim 19 wherein the processor is further to determine an identifier of the fault and a type of the fault, and to determine whether the fault is associated with an error code that is to be provided to a handler associated with the fault.
22. The system of claim 21 wherein the processor is further to retrieve the error code and provide the error code to the handler if the fault requires the delivery of the error code to the handler associated with the fault.
23. A machine-readable medium containing instructions which, when

executed by a processing system, cause the processing system to perform a method, the method comprising:

receiving a request to transition control to a virtual machine (VM) from a virtual machine monitor (VMM);
determining whether the VMM has requested a delivery of a fault to the VM; and
if the VMM has requested the delivery of a fault to the VM, delivering the fault to the VM when transitioning control to the VM.

24. The machine-readable medium of claim 23 wherein the request to transition control to the VM is received via an instruction executed by the VMM.

25. The machine-readable medium of claim 23 wherein determining whether the VMM has requested the delivery of the fault to the VM comprises:

accessing a fault indicator maintained by the VMM; and
determining whether the fault indicator is set to a delivery value.

26. The machine-readable medium of claim 23 wherein the method further comprises:

determining an identifier of the fault and a type of the fault; and
determining whether the fault is associated with an error code that is to

be provided to a handler associated with the fault.